

What is claimed is:

- 1 1. A chain comprising a plurality of parallel links articulately connected together in rows
2 along a direction of travel, comprising:
 - 3 a plurality of first links, a plurality of second links, and a plurality of outside links,
4 each of the links having a pair of apertures having a diameter and an inside
5 surface;
 - 6 a plurality of cylindrical bushings having an outer surface and an outside diameter,
7 and an open center having an inside surface and an inside diameter, the
8 bushings passing through the apertures of the first links and the second
9 links; and
 - 10 a plurality of cylindrical pins having an outer surface and an outer diameter,
11 passing through the apertures of the outer links and through the open center
12 of the bushings;
 - 13 the links being arranged in rows, alternating between a first row comprising at least
14 one first link and a second row comprising at least one second link and at
15 least one outer link on each edge of the chain;
 - 16 the diameter of the apertures of the first links and the outside diameter of the
17 bushings being tightly fit such that no relative movement occurs between
18 the inner surface of the apertures and the outer surface of the bushings;
 - 19 the diameter of the apertures of the second links being larger than the diameter of
20 the apertures of the first links, such that the outer surface of the bushing can
21 move relative to the inside surface of the apertures of the second links;
 - 22 the outside diameter of the pins being press-fit into the apertures of the outside
23 links;
 - 24 such that the chain is made up of alternating first rows of first links rigidly affixed
25 to the bushings and second rows of second links movable on the bushings
26 and outer links affixed to the pins.

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- 1 2. The chain of claim 1, wherein the second links are positioned along a center line of the
2 chain.
- 1 3. The chain of claim 2, wherein the second links are non-inverted center guide links.
- 1 4. The chain of claim 1, wherein each second row comprises a plurality of second links
2 positioned symmetrically along a center line of the chain.
- 1 5. The chain of claim 1, wherein the second links are inverted-tooth type links.
- 1 6. The chain of claim 1, wherein the outside links are inverted-tooth type links.
- 1 7. The chain of claim 1, wherein the outside links are guide links.
- 1 8. The chain of claim 1, wherein the first links are inverted-tooth type links.
- 1 9. The chain of claim 1, in which the outer diameter of the pins is sufficiently smaller than
2 the inner diameter of the bushings such that relative movement is possible
3 therebetween, the inner surface of the bushings forming a bearing surface against
4 the outer surface of the pins.
- 1 10. A chain comprising a plurality of parallel links articulately connected together in rows
2 along a direction of travel, comprising:
3 a plurality of links, each of the links having a pair of apertures having a diameter
4 and an inside surface;
5 a plurality of cylindrical bushings having an outer surface and an outside diameter,
6 and an open center having an inside surface and an inside diameter, the
7 bushings passing through the apertures of at least some of the links; and
8 a plurality of cylindrical pins having an outer surface and an outer diameter,
9 passing through the apertures of the links and through the open center of
10 the bushings, the outer diameter of the pins being less than the inside

11 diameter of the bushings, such that the pins may move within the open
12 center of the bushings;

13 the diameter of the apertures of at least some of the links being larger than the
14 outside diameter of the bushings, such that the outer surface of the bushings
15 can move relative to the inside surface of the apertures of the links;

16 such that the outside surface of the pins bear and articulate against the
17 inside surface of the bushings, and the inside surface of the
18 apertures in the links through which the bushings pass bear and
19 articulate against the outer surface of the bushings, the use of both
20 inside surface and outside surface of the bushings to carry load in a
21 plane of the links allowing increased bearing area for a given chain
22 width.